

REMARKS

In the Office Action claims 4, 5, 7, 8 and 10 are again rejected as being anticipated by U.S. Patent 4,852,527 Beardmore et al. Claims 6 and 9 are rejected as being unpatentable over Beardmore '527 in view of legal precedent. Reconsideration is requested.

The Remarks of the previous response are incorporated herein by reference, as they are believed to correctly explain why Beardmore '527 fails to anticipate or make obvious the invention of claims 4-10 of the present application. Further, it is submitted that the response to applicant's arguments rests upon incorrect conclusions as to the substance of applicant's claims, and that the rejections of the claims are based on false assumptions regarding the teachings of the Beardmore disclosure.

For example, the Response to Arguments states, "it is noted that the features upon which applicant relies (i.e., trapping lobe opens the intake valve) are not recited in applicant's claims". However, claim 4 does state that the trapping lobe opens the intake valve in the recitation, "the trapping lobe projecting a low height from the base circle of the cam configured to provide an associated intake valve with only a small lift during a portion of an exhaust event in an engine cycle".

The Response to Arguments further states, "Moreover, the trapping lobe (36) in Beardmore et al. clearly provides the associated intake valve with a small cam lift, as clearly shown in Figure 4a." But a cam lift is not the same as valve lift, as shown in Beardmore, column 4, lines 5-18, where it is made clear that the bluff ramp 36 does not open the valve, but only precompresses the valve train. The valve is opened later by the slow opening ramp 38 of Beardmore, which the Office Action equates with the dwell portion 37 of applicant's invention (see Fig. 3).

The Response to Arguments further states, "The phrase "having a small lift" as cited in base claim 4 does not necessarily mean that the intake valve must be opened." But this is incorrect, since the portion of claim 4 quoted above clearly calls for

the trapping lobe height to be configured to provide the intake valve (not the cam) with only a small lift.

To summarize, Beardmore et al. teach a cam having a "preopening bluff ramp 36" which compresses the valve train without opening the valve, a "constant cam velocity opening ramp 38" which begins opening of the valve, and a "conventional valve lift curve 39" which lifts the valve through its conventional opening curve. Applicant's claim 4 calls for a "trapping lobe 34" which raises the intake valve a small lift (to let some exhaust gas mix with the intake charge), a "dwell portion 37" which holds the valve nearly closed, to retain the trapped exhaust gas but slightly open to minimize wear, for the remainder of the exhaust event, and a conventional intake cam main lobe that opens the valve to admit the charge of air and exhaust gas to the cylinder.

Equating a prior art bluff ramp 36 with a trapping lobe 34 and a prior art sloped opening ramp 38 with a constant lift dwell portion 37 does not make them equivalent when they do not have the same shapes nor perform the same functions. Accordingly, it is submitted that the rejections of claims 4-10 of this application are not supported by an adequate basis and should be withdrawn for the reasons noted above and in the remarks of the prior response, which are incorporated by reference.

This amendment is believed to be fully responsive to the issues raised in the Office Action and to place this case in condition for allowance. Favorable action is requested.

Respectfully submitted,

By 

Robert J Outland, Attorney
Reg. No. 22,197
(313) 885-1500